FSA Upgrade Strategy
DRAFT

1. Overview

FSA has a number of projects using various tools within the Rational Analyst and Enterprise Studio suites as well as Rational ClearCase. As newer versions of these tools are released, FSA will need to upgrade these projects to the newer versions of the Rational toolset.

1.1. Objectives

The high level objectives of the upgrade strategy are; implement the enhanced application capabilities as quickly as possible for both new and existing users, improve internet and/or intranet security to meet OIG audit criteria, minimize down time for the existing users, and to efficiently complete the upgrade.

1.2. Upgrade Summary

There is an existing an existing Rational Analyst/Enterprise 2001a implementation that includes; 2001a clients, Oracle and Access databases for 2001a, and a combined, NT based, web (IIS 4) and 2001a application server. See the following Environments section for details on the existing environment.

The upgraded environment will include 2002 clients, , Oracle and Access databases for 2002, a separate W2K IIS 5 web server (with application web components), and a W2K 2002 application server. . See the following Environments section for details on the upgraded environment.

2. High Level Approach

The high level approach to performing the upgrade with the addition of only one host follows.

1. Acquire a W2K host of sufficient capacity (Pentium Class 500Mhz with at least 1 gigabyte of RAM) to serve as the combined “2002 application server” and IIS 5 intRAnet server.
2. Install, configure, and test the combined Rational Analyst/Enterprise 2002 application and IIS 5 intRAnet server without affecting ongoing operations.
3. Install, configure, and test 2002 clients and database components with the “combined” 2002 application/web server without affecting ongoing operations.
4. After validating the “combined” 2002 server against success criteria, designate it as the “combine 2002 operational” environment (intRAnet only).
5. Implement the “combined 2002 operational” environment for new projects/users (intRAnet only).
6. Migrate existing projects/users, a project at a time, from 2001a to the “combined 2002 operational” environment for new projects/users (intRAnet only).

7. Recycle the existing NT 2001a rational host into a separate, security approved, W2K IIS5 intERnet web server with (Rational 2002 web components).
8. Perform testing with the W2K IIS5 web server during off hour/maintenance windows with full back out to the "combined" environment. Validate the W2K Rational 2002 application server with the separate W2K IIS5 web server against success criteria.
9. Cut over all users to the separate W2K IIS5 web server with intERnet.

NOTES:

1. The acquisition of a second W2K IIS5 host to provide separate Rational 2002 web services should be considered. This will avoid the risks associated with the "combined" approach.
2. ClearCase upgrade must be complete prior to step 7. The long term plan for ClearCase is to migrate to UNIX. The ClearCase UNIX migration may not (likely will not) be completed prior to step 7.
3. There is not an extra server "to support additional capacity and testing needs of FSA" as identified in previous upgrade strategy drafts
4. The existing Oracle databases are scheduled to migrate from the development Oracle server to the Production Oracle server on ?date?.

3. High Level Schedule

Activity	Duration	Start	End
Configure Oracle Server for 2002	2 wks	5/9	5/23
Install 2002 test clients	2wks	5/9	5/23
Get the W2K 2002AppServ/IIS host	3 wks	5/2	5/23
Install Analyst (Enterprise??) Suite 2002 app server	1 wks	5/23	5/30
Configure and test 2002 "combined"	3wks	5/30	6/20
Implement 2002 for new projects install 2002 ops clients configure CQ2002 ops databases configure RP2002 ops databases	1wks	6/20	NA
Migrate existing CQ projects database export/import upgrade existing clients	1 wks	6/20	6/27
Possible outage for existing RP projects	1wks	6/20	6/27
Convert "rational" to IIS 5.0	1wks	6/27	7/4
Cutover to separate IIS	1 wks	7/4	7/11

NOTE: Presumes a ClearCase upgrade is complete by 6/27

4. Detailed Approach

The detailed approach to performing the upgrade with the addition of only one host follows. These steps map to high level approach.

1. Acquire a W2K host of sufficient capacity to server as the combined "2002 application server" and IIS 5 intRAnet server.
    a. The request has been made, the financing is being arranged.
    b. This host will serve as a prototype/test host for the 2002 upgrade.
    c. This host is referred to as the "combined 2002" server. It provides both 2002 application and we services.
    d. After successfully meeting some criteria, this host will be designated as the "combined ops" host in it's then current configuration and location. From then on changes to the host will become more controlled (need more detail)
    e. Once acquired, it will be delivered to Chuck/Jean. They will ensure current OS patch and IIS intRAnet, RCO, and PDC for the 2002 domain. This host will be located on the DEV LAN at the VDC for both "test" and "ops"(conflicts if Oracle server is on PROD LAN?). CSC will provide limited system admin support.
    f. The "upgrade team" will have accounts. This includes Chuck, Jean, Paul, Jay, Samson, Dan, and Jeff??
    g. TBD will provide domain administration.
2. Install, configure, and test the combined Rational Analyst/Enterprise 2002 application and IIS 5 intRAnet server without affecting ongoing operations.
    a. Only software and setups needed to test and rollout this host as the "combined 2002" server will be installed.
    b. Access to this will be through RCO. There will be TBD RCO accounts and clients.
    c. Some level of control over changes needs to followed.
    d. The Rational Enterprise (not Analyst?) Suite will be installed by TBD. A table of directories, files, accounts, groups, and registry parameters and values that will be tuned to satisfy security and functional criteria will be maintained. The "golden" table will be maintained in ClearCase.
    e. As many permissions as possible will be removed as testing progresses and for the final "run for record" tests.
    f. Access will/not TBD installed.
    g. Rational 2002 Web components will be installed.
    h. A web page for this server will TBD
3. Install, configure, and test 2002 clients and database components with the "combined" 2002 application/web server without affecting ongoing operations.
    a. Rational TBD Suite 2002 clients will be installed on both ACN and EDNet hosts. The client list is TBD.
    b. Clients will either be 2001a OR 2002. Not both and no mix and match.
    c. The development Oracle server will be configured to co-host the existing 2001a and the test 2002 tables with out interrupting ongoing 2001a service.
    d. A TBD sample of existing CQ databases will be populated into some test 2002 databases for testing.

e. The detailed procedures for configuring the Oracle server and managing and populated test and ops databases is TBD.
f. Access databases will/not TBD used
g. The impact and schedule for the existing CR to move to the Production Oracle server is TBD.
h. The success criteria is TBD.
i. The test suite is TBD.

4. After validating the "combined" 2002 server against success criteria, designate it as the "combine 2002 operational" environment (intRAnet only).
5. Implement the "combined 2002 operational" environment for new projects/users (intRAnet only).
    a. EzAudit, ConsistentAnswers, DMS?, and all other new RP and CQ projects will use RP/CQ 2002
6. Migrate existing RP/CQ projects/users, a project at a time, from 2001a to the "combined 2002 operational" environment for new projects/users (intRAnet only).
    a. The detailed steps are TBD
7. Recycle the existing NT 2001a rational host into a separate, security approved, W2K IIS5 intERnet web server with (Rational 2002 web components).
    a. this separate web server will be hardened and configured to the 2d table (above) parameters by CSC
    b. FLEXlm will have to be migrated.
    c. all other applications (Mqseries, etc) will have to be migrated
    d. Migrating FMS to CC 2002 will require some additional training for FMS developers and admins and will need to be coordinated with FMS. BTW what is the policy for insisting that projects upgrading as needed?
    e. A ClearCase solution to support FMS must be in place before recycling the rational host. The options are
        i. install CC4.1 on the combined 2002 server, relocate the FMS (and training) VOB
        ii. install CC2002 on the combined 2002 server, relocate the FMS (and training) VOB and upgrade the feature level
        iii. implement a CC2002 UNIX implementation for FMS (TBD with intRAnet server).. This can be done on FMS UNIX hosts, as part of and ITA solution, or (probably the quickest) piggy back on the EAI UNIX implementation.
8. Perform testing with the W2K IIS5 web server during off hour/maintenance windows with full back out to the "combined" environment. Validate the W2K Rational 2002 application server with the separate W2K IIS5 web server against success criteria.
    a. this requires keeping track of the configuration parameters and values for switching (quickly) between web servers.
    b. the success criteria is TBD
9. Cut over all users to the separate W2K IIS5 web server with intERnet.
    a. a backout process is available from 8a above

NOTES:

The acquisition of a second W2K IIS5 host to provide separate Rational 2002 web services should be considered. This will avoid many of the risks associated with the "combined" approach.
ClearCase upgrade must be complete prior to step 7. The long term plan for ClearCase is to migrate to UNIX. The ClearCase UNIX migration may not (likely will not) be completed prior to step 7.
There is not an extra server "to support additional capacity and testing needs of FSA" as identified in previous upgrade strategy drafts
The existing Oracle databases are scheduled to migrate from the development Oracle server to the Production Oracle server on ?date?.

Original draft Notes:
New Servers to support the Security and Upgrade efforts

- As stated above, FSA should obtain a new Windows 2000 server for the ClearQuest Web services. This can be a low-end server.
- FSA should obtain a windows 2000 server to support the testing of the upgraded software, the migration of the data stores and the integration of the tools to limit the impact on the production environment.
- FSA should obtain a Windows 2000 server to support the new production environment for the 2002 Rational software. Once the project upgrades have been tested, those upgrades would be migrated over to the new production environment for use by the individual project teams.
- Each project should be migrated separately
- This point is critical to the speed and efficiency of the upgrade process. Each projects environment should be upgraded separately to minimize the overall down time. This will also minimize the risks involved in the upgrade process.
- Develop a separate planning effort, testing effort and final migration for each project. With every successful project upgrade/migration, the follow on efforts will become easier and faster.

5. Environment Descriptions

The following tables provide a depiction of the hosts, location, application, and components of the existing and proposed environments.

5.1. Existing Environment

LAN/Host	Application	Application Components
VDC/PROD/Rational Host	NT4 IIS (4.0)Web Server	
	ClearCase 4.1 server/client	CC 4.1 application CC 4.1 Web components
	Rational Analyst Suite 2001a	CQ 2001a application CQWeb 2001a components CQ 2001a schema repos CQ 2001(not a) schema repos (Access database) RP 2001a application (Access database)??? RPWeb 2001a components
	Rational Enterprise Suite	????????
	Flex LM ver ?	
	RCO	RCO server
	MQSeries?	
	Other???	
EDNet/2001aClient Hosts (Users desktops)	Rational Analyst Suite 2001a client	CQ 2001a application client RP 2001a application client???
ACN/2001aClient Hosts (Users desktops)	Rational Analyst Suite 2001a client	CQ 2001a application client RP 2001a application client???
	Rational Enterprise Suite 2001a client ???	??
Oracle Server Host	CQ 2001a RP2001a	CQ 2001a schemas repos CQ 2001a user data RP 2001a schema
ACN/RCO client	RCO client	RCO client
Other??	Other??	

5.2. Combined Test Environment

Summary –The table below depicts the test environment.

1. Note the addition of 2002 table space on the Oracle server. Optionally, may consider Oracle (for test purposes) installed on the 2002AppTestServer.
2. This table identifies 2002 install, configure, and test – not migration of existing projects.
3. Note the addition of 2002TestClients. It is problematic to co-host 2001a and 2002 client installs.
4. Existing FLEXlm server will/not TBD be modified.
5. Note that ClearCase NT is not being upgraded to 2002. It is planned to implement ClearCase 2002 on UNIX hosts at the VDC. This must be completed before the rational host is removed from service or other contingencies should be considered.

Host	Application	Application Components
VDC/PROD/Rational Host	NT4 IIS (4.0)Web Server	Intranet
	ClearCase 4.1 server/client	CC 4.1 application CCWeb 4.1 components
	Rational Analyst Suite 2001a	CQ 2001a application CQ 2001a schema repos (Access database) CQ 2001(not a) schema repos (Access database) RP 2001a application ??? RP 4.1 Web components
	RCO	RCO server
	Rational Enterprise Suite	????????
	Flex LM ver ?	
	MQSeries?	
ACN/2001aClient Hosts (Users desktops)	Rational Analyst Suite 2001a client	CQ 2001a application client RP 2001a application client???
EDNet/2001aClient Hosts (Users desktops)	Rational Analyst Suite 2001a client	CQ 2001a application client RP 2001a application client???
VDC/DEV/Oracle Server Host	CQ 2001a RP 2001a CQ 2002 RP 2002	CQ 2001a schemas CQ 2001a user data RP 2001a schema CQ 2002 schemas CQ 2002 user data RP 2002 schema
VDC/DEV/2002AppTestServer	W2K IIS (5.0) Web Server	IntRAnet
	ClearCase 200TBD	CC 200TBD application

	server/client (or move to UNIX)	CCWeb 200TBD components
	Rational Analyst Suite 2002	CQ 2002 application CQWeb 2002 components CQ 2002 schema repos (Access database) RPWeb 2002 components
	RCO	RCO server
	FLEXlm	Some FLEXlm ilcenses?
EDNet/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/RCO host	RCO	RCO client
	Rational Enterprise Suite	????????
VDC/DEV/ccUNIX hosts	UNIX CC 2002	UNIX CC 2002 client/server

5.3. Combined Ops Environment

Summary –The table below depicts the combined Ops Environment.

1. Note the removal of 2001a table space from the Oracle server.
2. This table identifies 2002 install, configure, and test – not migration of existing projects.
3. Note the removal of 2001a Clients.
4. Assumes the existing FLEXlm server is TBD
5. Note that ClearCase NT is not being upgraded to 2002. It is planned to implement ClearCase 2002 on UNIX hosts at the VDC. This must be completed before the rational host is removed from service or other contingencies should be considered.

Host	Application	Application Components
VDC/PROD/Rational Host	NT4 IIS (4.0)Web Server	Intranet
	ClearCase 4.1 server/client	CC 4.1 application CCWeb 4.1 components
	RCO	RCO server
	Rational Enterprise Suite	????????
	Flex LM ver ?	
	MQSeries?	
VDC/DEV/Oracle Server Host	CQ 2002 RP 2002	CQ 2002 schemas CQ 2002 user data RP 2002 schema
VDC/DEV/2002AppTestServer	W2K IIS (5.0) Web Server	IntRAnet
	ClearCase 200TBD server/client (or move to UNIX)	CC 200TBD application CCWeb 200TBD components
	Rational Analyst Suite 2002	CQ 2002 application CQWeb 2002 components CQ 2002 schema repos (Access database) RPWeb 2002 components
	RCO	RCO server
	FLEXlm	Some FLEXlm ilcenses?
EDNet/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/RCO host	RCO	RCO client
	Rational Enterprise Suite	????????
VDC/DEV/ccUNIX hosts	UNIX CC 2002	UNIX CC 2002

		client/server

5.4. Separate web server

Summary –
This requires the addition of a W2K IIS 5.0 host. This host will be a "standalone" webserver and will be hardened as such.
Note that the ClearCase server and web support will need to be provided.

Host	Application	Application Components
VDC/DEV/IIS Web Server (W2K)	W2K IIS (5.0) Web Server	Internet
	Rational Analyst Suite 2002	CQWeb 2002 components RPWeb 2002 components
VDC/DEV/Oracle Server Host	CQ 2002 RP 2002	CQ 2002 schemas CQ 2002 user data RP 2002 schema
VDC/DEV/2002AppServer		
	ClearCase 200TBD server/client (or move to UNIX)	CC 200TBD application CCWeb 200TBD components
	Rational Analyst Suite 2002	CQ 2002 application CQ 2002 schema repos (Access database)
	RCO	RCO server
	FLEXlm	Some FLEXlm ilcenses?
EDNet/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/2002TestClients	Rational Analyst Suite 2002 client	CQ 2002 application client RP 2002 application client
ACN/RCO host	RCO	RCO client
	Rational Enterprise Suite	????????
VDC/DEV/ccUNIX hosts	UNIX CC 2002	UNIX CC 2002 client/server